Reprinted from The Horse, April 1997

Information on Vesicula Stomatitis Needed

The U.S. Animal Health Association and the Western States Livestock Association joined forces in creating a Blue Ribbon Panel to look atr versicular stomatis.The panel is composed of 12 experts from the equine industry and research scientists from USDA and the University of Arizona, including Scott Hurd, DVM, PhD, and Tome Cordes, DVM, Senior Staff Veterinarian, Equine Diseases, USDA. The following is the report put forth from that B;ue Ribbon Panel.

An outbreak of vesicular stomatitis in the summer of 1995 caused considerable economic losses to the livestock industry in six western states (Arizona, Colorado, New Mexico, Texas, Utah, and Wyoming) due to steps taken to contain the spread of the virus. For example, livestock owners were prevented from selling or moving their livestock outside the affected areas, sale barns were closed, livestock events were canceled, and clinically-ill animals required veterinary attention.

Epidemics of vesicular stomatitis virus, New Jersey serotype (VSV-NJ), occur periodically in the western part of the country. The most recent outbreak prior to 1995 was reported 10 years earlier. In the 1985 epizootic, 214 positive premises were reported. In 1995, 367 premises were positive for VSV-NJ; majority of the premises had horses or horses with other species; 15 percent had cattle or cattle with other species, and 10 percent had cattle and horses. Only 1 llama tested positive. In both 1985 and 1995 epizootic, no cases were reported in swine.

Throughout the duration of the 1995 outbreak, federal and state veterinarians from various units of USDA's Animal and Plant Health Inspection Service (APHIS) and its arm, Veterinary Services (VS), as well as private practitioners from the affected states, kept a watchful eye on the spread of the disease.

Recommendations

To fill the information gap on VSV, the panel identified 13 potential research topics under three categories: transmission studies, identifying the source of the virus, and prescription or development of an appropriate vaccine.

TRANSMISSION STUDIES

Information and disease spread mechanism and infection risk factors would allow for effective quarantine and control procedures. Topics of investigation in this area are:

- Epidemiologic studies such as field investigations, case-control studies, and ecologic studies using geographic information systems (GIS).
- Testing of blood collected in 1995 and in future outbreaks. Test results will provide a measure of undetected infection and detect viral activity during non-epidemic periods.
- Experimental studies to evaluate viral shedding and the potential for animal-to-animal transmission.
- Experimental studies to assess the role of insects in transmitting VSV.

VIRUS SOURCE

Cases of vesicular stomatitis occur every year in Central America and southern Mexico. It is not clear at this time if epidemic of VSV in the U.S. originate from these areas or if they are locally endemic. To determine the source of the virus, the following studies are recommended:

- Compare the genetic code of virus isolates collected from the U.S., Mexico, and Central America.
- Identify potential reservoir hosts in the U.S. (e.g., rodents, deer, elk, other wildlife), through field studies.
- Build predictive models associating occurrence in Latin American with epidemics in the U.S. through epidemiologic analysis.

VACCINE

The search is on for a VSV vaccine that provides: (a) protection from infection and clinical manifestation, (b) blood tests that are distinguishable from natural infection, and (3) effective enough as to allow movement of vaccinated animals. Although the panel recommends discovery or development of a “good” vaccine against VSV, it is not as high a priority as are the topics described earlier.

FUNDING PRIORITIES

While USDA through APHIS and the Agricultural Research Service (ARS) have initiated significant efforts to address research needs in VSV, there is currently no mechanism for funding and maintaining VSV research. Thus, the panel recommends an integrated, long-term commitment to VSV research through the following actions:

- Industry and commodity groups need to demonstrate support by contributing and earmarking funds for specific VSV research topics identified here.
- ARS set aside a special fund dedicated to addressing emerging disease issues, including VSV research.
- USDA develop a 10-year, 2-phase strategy for disease progression with provision for review at the end of the first phase.
- USDA, USAHA, and other interested entities need to establish a review panel to monitor projects to avoid redundancy and assure integration.
- APHIS continue its epidemiologic research and serologic surveillance of VSV.

For more information, contact any of the following members of the VSV Blue Ribbon Panel:
Dr. Marvin Beeman, American Horse Council, American Association of Equine Practitioners, Littleton, Colorado
Dr. Bob Bohlender, Chair, Animal Disease Research Subcommittee, National Cattlemen Beef Association, North Platte, Nebraska
Dr. Don Bosman, State Veterinarian, Cheyenne, Wyoming
Dr. Steve England, State Veterinarian, Albuquerque, New Mexico
Francis Gregersen and ***John Adams Reed***, National Milk Producers Association, Firestone, Colorado
Dr. Scott Hurd, Panel Chair, USDA:APHIS:VS:CEAH, Fort Collins, Colorado
Dr. Beth Lautner, National Pork Producers Council, Des Moines, Iowa
Dr. Linda Logan-Henfrey, National Program Leader, Animal Health, USDA:ARS, Beltsville, Maryland
Dr. C. John Mare, Veterinary Science and Microbiology, University of Arizona, Tucson, Arizona
Nancy Robinson, Livestock Marketing Association, Kansas City, Missouri
David Swetzer, Kentucky Thoroughbred Association, Lexington, Kentucky
Dr. Terrance Wilson, Emergency Programs Staff, Riverdale, Maryland